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Preface

It is a pleasure to bring you these summaries of research conducted over the past year at the U.S. Dairy Forage Research Center. The Center's mission is to build a knowledge and technology base for the dairy industry to fully exploit the use of forages in the production of milk. The Center was established in 1980 on the University of Wisconsin-Madison campus in Madison, WI, but is a federal unit of the Agricultural Research Service, U.S. Department of Agriculture (USDA). We employ agricultural engineers, plant and soil scientists, microbiologists, ruminant nutritionists, chemists and an agricultural economist who all work together to increase the efficiency of forage production and utilization by dairy farmers. At present, we have nineteen scientists: sixteen at Madison, two cluster scientists at the University of Minnesota in St. Paul, MN, and one cluster scientist at Cornell University in Ithaca, NY. These scientists hold faculty appointments in university departments and provide supervision for approximately 6-8 graduate students and 4 postdoctoral fellows. We function in close cooperation with the agricultural experiment stations of several states.

The Center's 63-acre research farm is located in Prairie du Sac, WI and has facilities for housing and feeding 320 milking cows and 350 replacement heifers and dry cows. An additional 1,600 acres of adjacent land is utilized by the Center in agreement with the U.S. Department of the Army. In 1999, the U.S. Defense Department declared that the former Badger Army Ammunition Plant (BAAP), adjacent to our research farm, is excess property. The USDA has requested a no-cost transfer of custody of 1,943 acres of this excess federal land so that we can continue our research efforts. We are working with the Ho Chunk Nation, Wisconsin Department of Natural Resources, Sauk County, Sumpter and Merrimac Townships in Sauk County, the GSA, and the Army to develop a unified management strategy for the entire property to facilitate transfer of the land. We are encouraged by the cooperation of all parties to bring about a solution.

Regarding staff updates, we hired Geoffrey E. Brink as Research Agronomist. Geoff comes to us with 18 years experience in USDA-ARS from the Waste Management and Forage Unit at Mississippi State, MS. Geoff received a B.S. degree in Agronomy from The Pennsylvania State University, and M.S. and Ph.D. degrees in Agronomy from the University of Minnesota. He brings an expertise in grazing management, forage utilization, and forage quality. Michael L. Sullivan, Research Molecular Geneticist, also joined us this year. Mike received a B.S. degree in Biochemistry and Molecular Biology from Purdue University and a Ph.D. degree in Cell and Molecular Biology from the University of Wisconsin. He brings experience in molecular biology of proteins and had been working as an ARS post-doc with Ron Hatfield to enhance perennial legumes to use polyphenol oxidase (PPO), present in red clover to protect protein during ensiling.

I am pleased to announce that Jill A. Davidson has been hired by the University of Wisconsin as Herd Manager at our research farm, replacing Leonard L. Strozinski who retired after 22 years in that position. Jill received a B.S. in Animal Science from The Ohio State University, a M.S. in Dairy Science from the University of Florida and a Ph.D. in Dairy Science from Michigan State University. She wanted to be involved in dairy research and also manage a large dairy operation. We are pleased to have Jill on the USDFRC team.

Larry D. Satter retired on July 3, 2003, following a distinguished 39-year career in dairy cattle nutrition. Larry worked for 17 years as a faculty member in the Department of Dairy Science at the

University of Wisconsin and 22 years as a Research Dairy Scientist with USDA-ARS at USDFRC. He served as Director of USDFRC from 1987 to 1998. Larry and his co-workers have conducted research on protein utilization by ruminants, phosphorus requirements of lactating dairy cows, and forage quality. He was recently recognized as a Highly Cited Researcher by ISI, publisher of Current Contents. This work helped usher in new concepts of protein utilization by ruminants. Research from Dr. Satter's group established the criteria for heat processing of soybeans to decrease protein degradation in the rumen. This research resulted in rapid growth in use of heat-processed soybeans as a supplement for lactating dairy cows. More recently he and his colleagues have developed strong evidence in support of reduced supplementation of phosphorus to dairy cows. Larry has received a number of honors, including the American Feed Manufacturer's Association Award for Outstanding Research in Dairy Cattle Nutrition, Distinguished Nutritionist Award by the Distillers Feed Research Council, Outstanding Teacher Award in the College of Agricultural and Life Sciences, Pioneer Hi-Bred Forage Award, ADSA Fellow, Nutrition Professionals Applied Nutrition Award from ADSA, and Award of Honor for contributions to the welfare of ADSA. His retirement plans include spending more time growing hardwood trees on his farm near Madison.

The FY 03 budget provided funding to support the addition of two scientists to DFRC: a Research Geneticist (Forage Plants) and a Research Agricultural Scientist (Dairy Systems Specialist). We are actively recruiting to fill these positions, as well as an Agricultural Engineer position (due to the retirement of Richard Koegel in 2002) and Larry Satter's position as a Research Dairy Scientist.

I want to thank scientists, support staff, students, visiting scientists, and stakeholders for making 2002-2003 a tremendous success. USDFRC stakeholders are currently developing a plan to enhance the dairy forage research capacity to meet the needs of the industry in the 21st century.

This collection of research summaries illustrates the progress that scientists and staff are making in developing information to help dairy farmers utilize their resources more effectively. The research is intended to benefit producers of forage crops, dairy farmers, and the consumers of dairy products.

Sincerely,

Neal P. Martin, Director
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